

PATENT

Attorney Docket No.: WEAT/0389
Express Mail No.: EV 349852660 US

Claims:

1. An overshot tool for retrieving an item from within a wellbore, the overshot tool comprising:

an elongated housing having an inner surface and an outer surface, the outer surface forming an annulus within the surrounding wellbore;

a gripping apparatus having an inner surface and an outer surface, the inner surface of the gripping apparatus being dimensioned to receive the item in the wellbore, and the outer surface of the gripping apparatus being slidably movable along the inner surface of the housing; and

a hydraulically actuated piston disposed along the inner surface of the housing, the piston being operatively connected to the gripping apparatus, and being slidably movable within the housing in response to a hydraulic pressure differential between the inner surface of the housing and the annulus so as to selectively move the gripping apparatus between a first position in which the item is gripped and a second position in which the item is released.

2. The overshot tool of claim 1, wherein the gripping apparatus comprises at least two radially arranged slip members.

3. The overshot tool of claim 2, wherein the gripping apparatus comprises at least three radially arranged slip members, each slip member having an upper tang for connecting to the piston.

4. The overshot tool of claim 2, further comprising wickers along the inner surface of the gripping apparatus for frictionally engaging the item in the wellbore when the overshot tool is pulled.

5. The overshot tool of claim 2, further comprising:

at least two ramp surfaces on the inner surface of the housing; and

PATENT

Attorney Docket No.: WEAT/0389

Express Mail No.: EV 349852660 US

at least two ramp surfaces on the outer surface of each of the slip members dimensioned to nest and move slidably along the at least two ramp surfaces on the inner surface of the housing.

6. The overshot tool of claim 5, wherein each of the slip members substantially recedes into the housing when the slip members nest within the at least two ramp surfaces, thereby enabling release of the item.

7. The overshot tool of claim 2, further comprising a stop ring, the stop ring: having an inner diameter that is smaller than the outer diameter of the item being retrieved from the wellbore; and being disposed between the piston and the gripping member.

8. The overshot tool of claim 7, wherein the housing comprises: a central body portion, the inner surface of the central body portion having the ramp surfaces that receive the gripping member; and an upper body portion, the inner surface of the upper body portion slidably receiving the piston, and the upper body portion having at least one port.

9. The overshot tool of claim 7, wherein the elongated housing is dimensioned to swallow an elongated fish.

10. The overshot tool of claim 9, wherein the elongated housing further comprises a tubular extension disposed between the central body portion and the upper body portion.

11. The overshot tool of claim 10, wherein the fish defines a mud motor having an elongated shaft and a motor housing.

12. The overshot tool of claim 10, wherein the fish defines a joint of parted pipe.

PATENT

Attorney Docket No.: WEAT/0389

Express Mail No.: EV 349852660 US

13. The overshot tool of claim 9, wherein the piston further comprises:

a lower shoulder in fluid communication with the inner surface of the housing; and

an upper shoulder in fluid communication with the annulus by means of the at least one port.

14. An overshot tool for retrieving an item from within a wellbore, the overshot tool comprising:

an elongated housing, the housing having an outer surface and an inner surface;

at least two ramp surfaces along the inner surface of the housing;

at least one gripping member having an upper end defining an upper tang, an inner surface having a gripping profile for gripping the item being retrieved, and an outer surface;

at least two ramp surfaces along the outer surface of the gripping member, the ramp surfaces along the outer surface of the gripping member configured to ride outward on the ramp surfaces along the inner surface of the housing when the housing is raised so as to grip the item; and

a piston moveable along the longitudinal axis of the overshot tool in response to hydraulic pressure within the inner surface of the housing, the piston being operatively connected to the upper tang of the gripping member, whereby the piston urges the member to ride upward along the ramp surface on the inner surface of the housing, thereby releasing the gripping member from the item being retrieved.

15. A method for engaging a tubular body in a wellbore, comprising the steps of: running an overshot tool into the wellbore on a working string, the overshot tool comprising:

an elongated housing having an inner surface and an outer surface, the outer surface forming an annulus within the surrounding wellbore;

a gripping apparatus having an inner surface and an outer surface, the inner surface of the gripping apparatus being dimensioned to receive the item

PATENT

Attorney Docket No.: WEAT/0389

Express Mail No.: EV 349852660 US

in the wellbore, and the outer surface of the gripping apparatus being slidably movable along the inner surface of the housing;

a hydraulically actuated piston disposed along the inner surface of the housing, the piston being operatively connected to the gripping apparatus, and being slidably movable within the housing in response to a hydraulic pressure differential between the inner surface of the housing and the annulus so as to selectively move the gripping apparatus between a first position in which the item is gripped and a second position in which the item is released; and

a tubular stop ring, the stop ring having an inner diameter that is smaller than the outer diameter of the body being retrieved from the wellbore, and being disposed between the piston and the gripping member;

tagging the top of the tubular body to be retrieved on the stop ring; and

pulling the working string so as to cause the gripping apparatus to frictionally engage and grip the tubular body.

16. The method for engaging a tubular body of claim 15, further comprising the step of:

injecting fluid under pressure into the working string and connected overshot tool, thereby releasing the gripping apparatus from the tubular body.

17. The method for engaging a tubular body of claim 16, wherein the gripping apparatus comprises at least two radially arranged slip members.

18. The method for engaging a tubular body of claim 17, wherein the gripping apparatus comprises at least three radially arranged slip members, each slip member having an upper tang for connecting to the piston.

19. The method for engaging a tubular body of claim 16, further comprising wickers along the inner surface of the gripping apparatus for frictionally engaging the body in the wellbore when the overshot tool is pulled.

PATENT

Attorney Docket No.: WEAT/0389
Express Mail No.: EV 349852660 US

20. The method for engaging a tubular body of claim 17, further comprising:
 - at least two ramp surfaces on the inner surface of the housing; and
 - at least two ramp surfaces on the outer surface of each of the slip members dimensioned to nest and move slidably along the at least two ramp surfaces on the inner surface of the housing.
21. The method for engaging a tubular body of claim 16, wherein the piston has an inner diameter dimensioned to receive a wireline-deployed string shot therethrough.
22. The method for engaging a tubular body of claim 17, wherein the housing comprises:
 - a central body portion, the inner surface of the central body portion having the ramp surfaces that receive the gripping member; and
 - an upper body portion, the inner surface of the upper body portion slidably receiving the piston, and the upper body portion having at least one port.
23. The method for engaging a tubular body of claim 22, wherein the elongated housing is dimensioned to swallow an elongated fish.
24. The method for engaging a tubular body of claim 23, wherein the elongated housing further comprises a tubular extension disposed between the central body portion and the upper body portion.
25. The method for engaging a tubular body of claim 24, wherein the fish defines a mud motor having an elongated shaft and a motor housing.
26. The method for engaging a tubular body of claim 24, wherein the fish defines a joint of parted pipe.

PATENT

Attorney Docket No.: WEAT/0389
Express Mail No.: EV 349852660 US

27. The method for engaging a tubular body of claim 23, wherein the piston further comprises:

a lower shoulder in fluid communication with the inner surface of the housing; and

an upper shoulder in fluid communication with the annulus by means of the at least one port.

28. The method for engaging a tubular body of claim 20, wherein each of the slip members substantially recedes into the housing when the slip members nest within the at least two ramp surfaces, thereby enabling release of the tubular body.